

THE LONG-RUN RELATIONSHIP BETWEEN COMMERCE AND SUSTAINABLE DEVELOPMENT IN BALTIC AND CENTRAL AND EASTERN EUROPEAN COUNTRIES

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Abstract

The paper investigates the long-run relationship between commerce intensity and a measure of sustainable development for ten ex-communist countries that have recently joined the EU. The originality of this paper consists in applying the co-integration testing techniques for panel data regarding commerce and the “authentic” savings rate, an indicator of sustainable development, which determines the productive base that will be inherited by future generations. Econometric tests suggest a negative long-run relationship between commerce intensity and sustainable development. This result is in agreement with conclusions of other studies that have documented, in the region, an economic growth fueled by the adoption of unsustainable western consumption ideals, a low public consciousness about ecological values and weak institutions dealing with environmental issues at both government and civil society level. The negative correlation that was found could be a symptom for an evolution stage towards an economic and social maturity where commerce expansion is synchronized with accumulation of wealth that will be inherited by future generations.

Keywords: sustainable development, commerce, Central and Eastern Europe, genuine savings, co-integration, panel data

JEL Classification: F18, F43, O11, O19

Introduction

The relationship between trade and sustainable development has been intensely debated and politicized. Alam (2008) provides an overview of the main disputes. Two main channels emerged in the literature. First channel deals with the trade’s impact on environment, while the second one focuses on trade’s contribution to economic growth. Regarding the first channel, Grossman and Krueger (1991) presented the composition, the scale and the technique effect respectively. First effect is related to the changes in the composition of economy’s structure as a result of international specialization. Some countries specialize in

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less polluting products, while countries with weak ecological standards attract “dirty” industries. The second effect refers to accelerated environment degradation due to increased production scale supported by trade. The last effect deals with the trade’s positive impact where the increased income strengthens the investments in cleaner technologies. The channel that links trade and economic growth is based on the assumption that free trade leads to a higher Gross Domestic Product (GDP) that in turn allows for investments in education, healthcare or environment preservation, creating the premises of sustainable development. Winters (2004) provides an overview of the recent literature researching the effects of trade liberalization on economic growth. One conclusion is that despite many theoretical and empirical disputes, there is convergence towards the idea that trade liberalization leads most likely to an, at least temporary, economic growth. For sure the link between economic growth and sustainable development requires a proper administrative and political framework, as well as a strong civil society, driven by socio-human values and not by economic interests.

Former communist countries from the Baltic region, and Central and Eastern Europe, are an interesting target for an analysis of the trade-sustainable development relationship. These countries are somewhere in the middle between rich, developed countries and poor, developing ones. Thus, we can avoid the much discussed asymmetric effects of globalization over the poor and rich countries presented by Stiglitz (2002, 2006). In the past years these economies have experienced a fast increase in both internal and external trade through the transition to market economy and the completion of the required formal steps for joining the European Union (EU).

So far, the literature concerning the sustainable development in these countries has focused on the evolution of different economic, social and environmental indicators as a result of economic liberalization. There were both positive and negative results (Bochniarz and Cohen, 2006, and Andonova, 2004). While the positive effects for the wellbeing of current generation are broadly accepted (Rapacki and Prochniak, 2008), the sustainability of development is questionable because of the import of western consumption ideals and weak institutions of both government and civil society (Vandever and Carmin, 2005, p. 317-320).

This paper attempts to extend the literature in the field, by studying the link between commerce liberalization and expansion on one side, and a future-oriented indicator of sustainable development, on the other side. More precisely, we are interested in the long run correlation between trade expansion and the evolution of productive base that is going to be inherited by future generations, i.e., the core of their wellbeing. The productive base consists of institutions and capital assets of an economy (Dasgupta, 2007). The following questions will be investigated. First, we aim to check the existence of empirical evidence for a link between the two processes. Next, if such evidence exists, we are interested in the sign of the relationship. Last but not least, we shall compare the results with the conclusions from previous research. Panel data co-integration and estimation techniques will be used. The sample covers ten former communist economies that are nowadays enjoying the EU membership.

The paper has the following structure. The first section outlines the concept of sustainable development and introduces the genuine savings indicator that is to be used in the econometric model. The second section discusses the relationship between trade and sustainable development referring to the particularities of chosen economies. In the third

part there is a presentation of the model and data. Thereafter, is the description of the econometric methodology and empirical results. The paper closes with the main conclusions.

1. Outline of sustainable development concept that will be used in the model

Sustainable development ensures that the current generation meets its needs without compromising the ability of future generations to meet their own needs. The concept has been popularized in 1987 by the United Nations World Commission on Environment and Development, which was chaired by Mrs. Gro Harlem Brundtland, former Prime-Minister of Norway (United Nations, UN, 1987). Initially, the maximum attention was granted to the issue of environment degradation as a consequence of accelerated economic growth. A strong economic performance based on the ruthless exploitation of natural resources can provide a comfortable life to the present generation, at the cost of sacrificing the wellbeing of future generations which will inherit a worn-out and potentially toxic vital space. Currently, the concept of sustainable development has a wider socio-human perspective, being upheld by many interdependent and mutually reinforcing pillars. They refer to natural environment and economic activity, as well as to social or even cultural development (International Union for Conservation of Nature, IUCN, 2006).

According to the UN (2008), we can interpret sustainable development as development that can continue “forever” or at least for a very long time; say, for several generations. More precisely, sustainable development implies a long-run growth in consumption. From the analysis of sustainable development objectives two visions have emerged. The so-called integrated vision asserts that the main objective of sustainable development is ensuring in the same time both the present generations’ welfare and the potential of future generations’ wellbeing. The second, so called future-oriented vision argues that sustainable development measures should in fact focus on ensuring the premises for satisfying the needs of future generations.

The first vision is closer to the original report of the „Brundtland” commission, which explicitly highlighted the present and future generations’ needs. According to Council of European Union, CEU (2006), the sustainable development strategy of EU follows this vision taking the pledge to improve life quality for present and future generations by promoting environment protection, democracy, gender equality, solidarity, rule of law, fundamental rights etc. The EU strategic framework is reflected by sustainable development indicators published by Eurostat. The data refer to socio-economic development, consumption, production, social inclusion, demographic changes, public health, climate changes, transportation, international aid and good governance. This approach offers to policy-makers a wide set of data structured on three levels, starting from general objectives to indicators of concrete measures imposed by the strategy.

The integrated vision can be criticized because setting an efficient hierarchy of priorities is difficult. Present generation’s wellbeing is the goal of most policies of any government, regardless of whether these policies are social, economic or environmental and stretch over a short or over a long-run. When sustainable development concept is almost everywhere, it is not easy to find the maximum priority area. Because of elections’ pressure, governments will be prone to measures with tangible results in the short run, claiming that they implicitly

support the sustainable development, even if fundamental goals such as environment protection might fail to get enough attention and resources.

Incontestably the integrated vision receives a broad international political support. In addition to the argument concerning the definition of sustainable development from the “Brundtland” report, another key reason is the necessity to address the worldwide extreme poverty issue. A beneficial side effect of promoting the sustainable development concept was the increase in attention given to the fight against poverty. Every discourse that tries to focus on sustainable development measures towards ensuring the potential of future generations’ wellbeing can be criticized for ignoring the extreme poverty tragedy that affects a large part of humankind.

Nevertheless the future-oriented vision has the advantage of making a clear distinction between “development” as a classical objective of any form of democratic governance and “sustainable development” as a strategy explicitly oriented towards future generations. Thus, the introduction of a sustainable development strategy opens a new horizon for policies and measures necessary to be developed and implemented by policy-makers. This vision has inspired the derivation of so-called capital-based sustainable development indicators, where the concept of “capital” covers a broad range of forms including the financial and human one. In this approach UN, et al. (2003, p. 4) argues that “sustainable development is development that ensures non-declining per capita national wealth by replacing or conserving the sources of that wealth; that is, stocks of produced, human, social and natural capital”.

As Dasgupta (2007) shows, the wealth of a nation, also called the “productive base”, should not decrease for ensuring the potential of satisfying the future generations’ needs at least at the current level. The aforementioned paper includes statistical data illustrating several cases concerning developing countries. For instance, in the case of China, between 1970 and 2000, both GDP per capita and national wealth per capita increased year over year. In the same time, the GDP per capita of Pakistan increased at an average annual rate of 2.2%, while national wealth decreased by 0.7%. The author argues that GDP per capita is not an adequate indicator to estimate the sustainable development evolution. Nor Human Development Index (HDI) is recommendable because it reflects, as GDP per capita does, the current condition of society. The present can be improved by depleting the national wealth per capita, thus endangering the wellbeing of future generations.

Sustainable development requires that each generation bequeaths a national wealth, i.e., productive base, at least as big as the one that it has inherited. The data used in the model from this paper are based on this outline of sustainable development concept. According to Dasgupta (2007, p. 3), the changes in the national wealth are given by the so-called inclusive investments. The inclusive investments concept refers to a new economic concept designed to evaluate the capital stock changes on a broadly basis, related to the economic, human and natural space. The counterparty of inclusive investments is the genuine savings. Hamilton and Clemens (1998) present a model of computing genuine savings. The model corresponds to Hartwick-Solow condition which requires that for consumption to be sustainable, the increases in capital stock should offset the depletion of natural resources (Hartwick, 1977 and Solow, 1974).

Based on Hamilton and Clemens (1998) model, the World Bank computes an indicator called adjusted net savings that is a proxy for genuine savings. The indicator starts from

gross savings, as a difference between income and consumption. After subtracting depreciation of fixed capital, we obtain net savings, which are then adjusted with human capital investments, depletion of natural resources and pollution damages. This measure will be used in this paper. There are at least two reasons for choosing the adjusted net savings rate instead of an indicator based on the first vision. First, the statistics based on the integrated vision are difficult to be put in a hierarchical order, both according to importance and impact over current and future generation. It is hard to say whether sustainable development is better appraised using pollution, life expectancy, good governance, energy consumption in transport or poverty rate statistics. Secondly, many indicators from the first vision are sensitive to GDP/capita, that as we have seen can increase even as the productive base shrinks.

2. The relationship between trade and sustainable development in Baltic and Central and Eastern European countries

Trade is essential for the functioning of economy. The “market economy” concept suggests that it is based on commercial exchange of goods and services on many markets. Industrialization, fast progress in transportation, increased power of multinationals and global outsourcing of goods and services contributed to an unprecedented growth of internal and external trade intensity in the last decades. The liberalization and expansion of world commerce is supported by the modern society’s tendency to gradually eliminate all obstacles that hinder the development of external markets, of exchanges and free circulation of commodities across the world (Vasile, 2005). In addition to these factors, the Baltic and Central and Eastern European countries have been exposed to the geographical proximity of the powerful common European market, which according to gravity models for analyzing international trade, has further contributed to an intensification of their external trade (Bussiere, et al., 2005).

Classics such as Smith and Ricardo proved that trade can make nations richer and today there is a reasonably broad consensus concerning the correlation between trade expansion and economic growth. The free flow of merchandises and services contributes to the spread of technological progress. The impact of technological progress in growth models is well known (Solow, 1956 and Romer, 1990). Open economies improve their infrastructure faster, attract more foreign direct investments and usually grow faster. A long lasting economic growth naturally requires a proper political and institutional framework. It appears that this framework is also improving once the borders are opened (Billmeier and Nannicini, 2007). From the point of view of world’s main international financial institutions trade liberalization should be part of every economic recovery program.

Through its potential for sustaining the economic growth, trade should contribute positively to sustainable development. The higher income can be used by policy-makers for improvement measures in education, healthcare, environment protection, development of cleaner technologies etc. The key condition is the implementation of proper policies that are to be checked by a strong civil society driven by core human values and not by economic interests. Trade will negatively impact sustainable development when its favorable effects are offset by increased pollution caused by more transportation or the migration of dirty industries to low ecological standards countries. Here also counts the extreme industrial agriculture and depletion of natural resources, e.g., deforestation.

As a corollary we can argue that a premise of sustainable development is a commerce that maintains the balance between consumption and resources. Consumption represents the utilization of goods or services for satisfying the needs and implies the destruction of these goods and services, while commerce and trade involve buying and selling of goods and services (Bernard and Colli, 1994). Commercial relationships take place between producers and consumers, as well as between different stages of production. An increase in domestic consumption causes an intensification of commerce and trade in domestic and foreign goods and services. In this case, consumption and trade contribute together to a higher GDP. However, an economic growth based on consumption is not sustainable, since the resources will eventually be exhausted. This conclusion is important for the new members of EU that had to fight against the hard legacy of communist past when the economy was under many constraints.

Unfortunately, according to the European Bank for Reconstruction and Development, EBRD (2006) the economic growth from Central and Eastern Europe has been mainly fueled by exactly an expansion of consumption. As the countries have become more prosperous, people have sought an increase in wellbeing that has been financed very often with loans. The economic growth has allowed an improvement of many development indicators that are, according to the integrated view, included in sustainable development category, such as per capita income and life expectancy (Archibald, et al., 2005). According to Eurostat (2009) between 2000 and 2006, the GDP/capita increased in the countries from our sample by 43.3%, while final expenditures of households were up by 48.8%. In the same period of time, life expectancy increased on average one year and three months, while the weight of population with an upper second degree increased by 6.7%. Nevertheless, these significant improvements should be compared with the expansion of these countries' external debt. For example, in 2000 Latvia, Bulgaria, Poland and Romania had together a combined external debt of about USD 90 billions. In 2006 the cumulated debt of these countries was bigger than USD 230 billions. The trend of fast growing borrowing could be observed across the region.

According to Azmanova (2006, p. 336), although the communism was harmful for the ecology in Central and Eastern Europe, the post-communist period was hardly any better, as environment issues have a very low political priority in the region. As a proof, at the time of this article, out of 55 members of the Green group from European Parliament, only two were coming from the countries from our sample that have together 190 representatives. In national parliaments the greens are present only in the Czech Republic, Latvia and Estonia, while they hold seats in the vast majority of assemblies from the older EU member states. The progresses in the fight against pollution from last years were often accomplished solely for satisfying the requirements of Brussels's bureaucrats, without a wide acceptance of ecological values among people. In these countries the institutional framework is still underdeveloped. Many measures that have been imposed by EU are costly and there is a feeling of rejection among those people that were affected. The required legislative harmonization with EU has been criticized also for deflecting the attention from the national priorities of each country, as well as for hindering the use of other instruments that could have been cheaper and better adapted to local conditions (Andonova, 2004).

From the point of view of future-oriented vision, where sustainable development requires the equilibrium between consumption and available resources, according to Vandever and Carmin (2005, p. 318), EU has exported eastwards both its strengths and weaknesses. In

fields like atomic energy, waste treatment, ground and air transportation, urban area sprawl and, above all, the western consumption ideal, European policies and practices are not sustainable. The attempt of an Europeanization of new members and their transformation according to the western model is not sustainable. According to Andonova et al. (2007) for ex-communist countries the commercial openness has undermined the sustainable development by reducing the governments' ability to collect environmental taxes and to promote environment protection investments.

For extending the scope of analysis, besides the international trade, we shall also introduce in the model an internal commerce indicator. The motivation is related to the special case of the chosen countries. All of them are ex-communist economies that went through the process of transition to market economy prior to joining the EU. The border opening, after the fall of the iron curtain allowed a massive inflow of western goods into these countries. For an efficient distribution, a whole new shopping, transportation and communication infrastructure was needed. The building of this infrastructure has diverted human and material resources from other economic activities. Therefore the weight of gross value added in retail, wholesale, transportation and communication in GDP is an indicator of internal orientation to commerce. Thus, we use the assumption that trade openness does not end at the border but goes through the whole economy.

3. Model and data description

The purpose of empirical analysis from this article is to investigate the existence and the direction of a long-run relationship between commerce and sustainable development for ten emerging European economies that were part of the former socialist block. The conditions for ensuring the sustainable development have been appraised through the adjusted net savings rate, as an indicator of authentic savings.

Bolt, et al. (2002) presents the detailed methodology for computing the adjusted net savings rate. It is reported as a weight in Gross National Income (GNI). The calculation formula is:

$$ANSR = \frac{GNS - D + CSE - \sum R_i - CD}{GNI} \quad (1)$$

where *ANSR* is the adjusted net savings rate, *GNS* represents gross national savings, *D* is the depreciation of capital, *CSE* is the current expenditure on education, *R* is the rent from depletion of natural capital, *CD* are the damages from carbon dioxide emissions calculated at USD 20 (at 1995 prices) for a tone of carbon dioxide. The factors from the numerator of the formula (1) are depicted in the following image. (Figure no. 1)

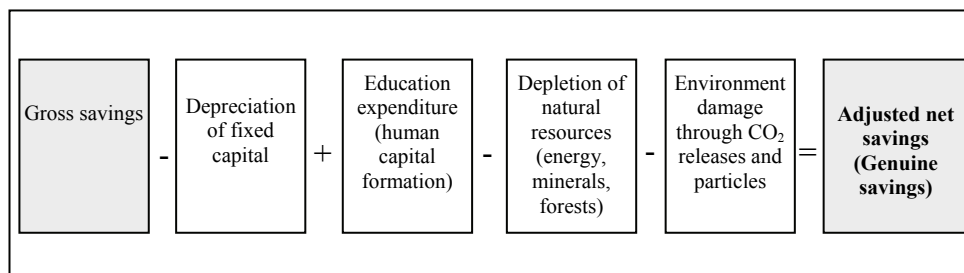


Figure no. 1: The methodology for adjusted net savings calculation

Source: Adapted after Bolt, et al. (1992)

In this paper we use the adjusted net savings rate calculated by World Bank. The only change was the employment of GDP instead of GNI in the denominator for ensuring the comparability with the rest of the data set.

As we argued in the second section, the relationship between commerce and sustainable development is complex and can be both positive and negative. In order to test the statistical significance and the sign of the relationship, we use a model where the adjusted net savings rate is the dependent variable. The independent variables are indicators of internal and external commerce, along with some control variables for ensuring the “ceteris paribus” condition.

In a recent paper, Kiran, et al. (2009) propose a linear model for the analysis of the link between a performance indicator of whole economy and a sectoral development one. The dependent variable is GDP/capita while the independent one is the degree of development in the financial sector. In the model, there have been included as control variables: the trade openness, gross investments and final government consumption expenditure. This model can be adapted for the analysis from this paper by replacing the GDP/capita with the adjusted net savings rate. Furthermore instead of internal financial development indicator, we include an indicator for internal commerce intensity. The control variables regarding gross investments and government expenditures can be kept, due to their impact on labor productivity, depletion of natural resources, pollution etc.

The model adapted after Kiran et al. (2009, p. 2) has the expression:

$$Y_{it} = \beta_{0i} + \beta_{1i}T_{it}^{int} + \beta_{2i}T_{it}^{ext} + \beta_{3i}K_{it} + \beta_{4i}G_{it} + u_{it} \quad (2)$$

where Y_{it} is the weight in GDP of adjusted net savings, T_{it}^{int} represents the internal trade indicator computed as the weight in GDP of the gross value added in retail, wholesale, hotels, restaurant, transportation and communication, T_{it}^{ext} refers to the openness indicator calculated as the weight of merchandise exports and imports in GDP, K_{it} is an investment indicator computed as the weight of gross capital formation in GDP, G_{it} stands for the involvement of the government in the economy quantified as weight of final government consumption in GDP and u_{it} is the error term.

Data are annual, computed as weight in GDP for each indicator, and covers the following ten countries: Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia and Slovakia. The sample period is 1995 - 2006. Years 2007 and 2008 were not included in the analysis because sustainable development indicators were unavailable. The most recent results communicated by the World Bank refer to 2006 (World Bank, 2009). In addition to this source, data were provided by Eurostat, and by the Romanian National Institute of Statistics (INS) (Eurostat, 2009 and INS, 2009). All data were transformed by taking natural logarithms.

4. Econometric methodology and empirical results

The long-run relationship between two or more economic variables is studied in empirical analysis using co-integration tests. Economic variables are usually nonstationary, i.e., they do not possess a clear tendency towards a constant or a linear trend. When processes are nonstationary, the use of statistical-econometric methodology based on stationarity hypothesis generates spurious results. Engle and Granger (1987) developed the co-integration concept, showing that nonstationary processes can be linked together by a long-run relationship, when a linear combination of them is stationary. In other words, although the processes can diverge in the short-run, there might be a stationary and convergent linear relationship in the long run. A co-integrating relationship can be seen as an equilibrium relationship over a longer time. This is what we aim to find in the case of sustainable development and intensity of internal and external trade.

The first step is the investigation of stationarity hypothesis. We shall use two well-known tests designed for panel data. Im, Pesaran and Shin (2003) (IPS) proposed a test based on the average of Augmented Dickey-Fuller (ADF) statistics, computed from ADF regressions for each section of the panel. A brief presentation of the ADF test can be found for example in Gujarati (1995, p. 720). The IPS test has the following formula:

$$t_{IPS} = \frac{\sqrt{N}(\bar{t} - E[t_i | \rho_i = 0])}{\sqrt{Var[t_i | \rho_i = 0]}} \sim N(0,1) \quad (3)$$

where N is the number of countries, \bar{t} is the average of ADF tests computed for every country included in the panel, ρ_i is the autoregressive root of ADF equations, $E[t_i | \rho_i = 0]$ and $\sqrt{Var[t_i | \rho_i = 0]}$ are the mean and standard deviation estimated through Monte Carlo simulations.

An alternative approach is provided by Maddala and Wu (1999) (MW). The stationarity test is based on combining the p-values of N ADF tests. Let us denote by p_i the p-value of the ADF test for cross-section i . The test is given by the formula:

$$P = -2 \sum_{i=1}^N \ln p_i \quad (4)$$

The test follows a χ -square distribution with $2N$ degrees of freedom.

Both tests have the null hypothesis that the underlying process is nonstationary (has a unit-root). For the ADF test is necessary to select the number of lags. We have used Schwarz informational criterion. The tests were employed both in levels and first differences to establish the order of integration.

Results reported in table no. 1 show that all series are I(1) and we can proceed with the co-integration testing.

Table no. 1: Results of unit-root tests

Variable	Level		First differences	
	IPS	MW	IPS	MW
Adjusted net savings	-0.7459	21.9858	-5.45242*	63.4875*
Internal trade	1.30185	14.9245	-4.83027*	62.1870*
External trade	1.38433	14.8249	-4.54929*	56.6238*
Gross capital formation	-1.15770	25.7420	-4.79776*	59.6569*
Final government expenditure	0.75413	20.2664	-5.99741*	71.1644*
* indicates significance at the 5% confidence level				

Pedroni (1994, 2004) extended the co-integration methodology elaborated by Engle-Granger (1987), allowing tests for panel data. The methodology starts with the estimation of equation (2), which can be adapted by removing the intercept or adding a trend component. The null hypothesis states that there is no co-integration, i.e., errors are I(1). The test can be employed both within-dimension (assuming homogeneity between sections) and between-dimension (when heterogeneity between sections is accepted).

All countries in the sample were confined behind the iron curtain, facing afterwards a difficult transition process to market economy. However, their evolution in the '90 was very different. Therefore, we consider that the heterogeneity hypothesis is more plausible in testing for co-integration. As Pedroni (2000, p. 117) notes, the between-dimension test exhibits relatively little small sample-size distortion.

The between-dimension statistic tests computed are a rho test, an ADF-based-parametric test and a non-parametric test based on the Phillips-Peron methodology (Phillips and Peron, 1988). The exact formulas of the tests are thoroughly described for example in Pedroni (1999, p. 660). All statistics are standardized using the following formula in order to achieve asymptotical convergence towards standard normal distribution:

$$\frac{t_r - \mu\sqrt{N}}{\sqrt{\nu}} \Rightarrow N(0,1) \quad (5)$$

where t_r is the test statistic, μ and ν are adjusting terms computed through Monte Carlo simulations (Pedroni, 1999, p. 666).

All computed tests (Table. no. 2) indicate that the null hypothesis of no co-integration cannot be accepted. Thus, there is evidence for the existence of a long-run relationship between the potential for a sustainable development (as indicated by genuine savings), internal and external commerce, gross investment and government consumption.

Table no. 2: Results of Cointegration test

Test	Model specification:		
	1. no intercept or trend	2. intercept only	3. intercept and trend
Group rho	3.200470*	4.281487*	4.956364*
Group PP	-2.974445*	-1.899290 [#]	-3.216297*
Group ADF	-5.392693*	-3.386205*	-3.199752*
* indicates significance at the 5% confidence level			
# indicates significance at the 10% confidence level			

For estimating the parameters of the model, the OLS method is not recommended because results can be asymptotically spurious due to co-integration in a panel with heterogeneous cross-sections (Pedroni, 2000, p. 93). Therefore, we will use the fully modified ordinary least square method (FMOLS). This allows the collection of long-run information, while the short-run fixed and dynamic effects can be heterogeneous between countries. The method has also the advantage of allowing estimations using small size samples.

The model from equation (2) can be written as:

$$Y_{it} = \beta_{0i} + \sum_{j=1}^4 \beta_{ji} X_{jit} + u_{it} \quad (6)$$

where X_{jit} is the vector of explanatory variables. β_{ji} estimates are given by the formula:

$$\beta_{ji}^* = N^{-1} \sum_{i=1}^N \left(\sum_{t=1}^T (X_{it} - \bar{X}_i) \right)^{-1} \left(\sum_{t=1}^T (X_{it} - \bar{X}_i) Y_{it}^* - T \hat{\lambda}_i \right) \quad (7)$$

where Y_{it}^* is the dependent variable adjusted for the covariance between error terms and regressors, and $T \hat{\lambda}_i$ is the adjustment factor for the presence of intercept. The t -test statistics computed to check the signification of the parameters follows standard normal distribution.

The estimation results are reported in table no. 3. All coefficients are significant at a 5% confidence level. The investment and government consumption coefficients are positive, indicating a positive link with sustainable development indicator. On the other hand, we can remark the negative sign in front of internal and external trade intensity indicators, showing that for our panel in the long run, commerce development is negatively linked with sustainable development.

Table no. 3: Results of FMOLS estimation of the model

	Explanatory variables				
	Intercept	Internal trade	External trade	Gross capital formation	Final government expenditure
Coefficient	7.65825*	-1.42969*	-0.83053*	0.44205*	0.80769*
t -test	(6.84037)	(-5.58761)	(-5.65233)	(2.14138)	(3.07973)
* indicates significance at the 5% confidence level					

Conclusions

The main goal of this paper was to study the long-run link between trade and sustainable development for a sample of ten Baltic and Central and Eastern European countries. As these countries went through the transition to market economy, their economies largely opened, trade flourished and there was a recent surge in prosperity. The implicit question is whether the current wellbeing is transitory or reflects a genuine sustainable development.

The empirical results support the hypothesis of existence of a long-run relationship between sustainable development and both internal and external commerce intensity. Tests have indicated the presence of cointegration between adjusted net savings rate and the indicators of internal and external commerce. With other words, even if the observed variables are nonstationary, we can argue that there is a long-run equilibrium relationship between them. This conclusion could support the findings from Grossman and Krueger (1991), integrated in the sustainable development context. Once this relationship was found, the next step of analysis was the investigation of the sign of correlation. The estimation of the model produced negative coefficients for the indicators of internal and external commerce. This result suggests a negative long-run correlation between adjusted net savings rate and the weights in GDP of both external trade and gross added value in internal commerce. Thus, we can argue that trade openness and commerce expansion are associated with a relative reduction in authentic savings that are ensuring the preservation of productive base, i.e., the source of future generations' wellbeing. This result can be considered as being in harmony with the conclusions from Vandever and Carmin (2005), Andonova (2004), Andonova, et al. (2007) and Azmanova (2006). In the same time the result is not necessarily in contradiction with conclusions from Archibald, et al. (2005), as we deal with two different visions concerning sustainable development.

The research is important for at least two reasons. First it contributes to the extension of literature in the field of the link between trade and sustainable development, using modern quantitative methods for panel data. Secondly, it provides empirical results that could be useful for economic policy orientation for a group of countries that despite major advancements still has a long road ahead before joining the developed world.

Given the implications of this paper's conclusions, a continuation and extension of research would be very welcome. The limits of the employed model are caused by the size and recentness of time series from the sample, by the choice of independent variables, as well as, by potential structural changes in the analyzed processes. Once longer time series are available, the increased number of degrees of freedom will allow an extension of the set of independent variables. Econometric tests will be able to assess the stability of model's coefficients over the considered time span, in order to detect the effects of possible structural changes caused by the economic evolution in the region.

As globalization will most likely further push for an expansion of commerce, should we worry about the sustainable development of this region? Maybe the only possible answer is "yes and no". "Yes," because the current crisis will cause an even more ruthless depletion of natural resources, a reduction in human capital and environment investments, while the wide open doors of central banks will further provide money for fueling the consumption. Even if currently there has been a reduction in consumption, it has been accompanied by a significant shrinkage of the economy on the whole, which has in turn reduced the saving potential." No", because the negative link between trade and sustainable development

might be reversible if these economies become more mature and adhere to the values of equilibrium between consumption and available resources.

The conclusions of this paper do not support a reduction of consumption, but a better harmonization with sustainable development goals. Commerce will always be the link between producers and consumers, ensuring multiplier effects for economic growth. The more consumption and production will be oriented towards environmental quality improvement and human capital progress, the more commerce will support the sustainable development.

Ideally, we could witness the realization of so called environment Kuznets curves (Stern, et al., 1996). This theory predicts that in any country the increase in GDP/capita is initially accompanied by a fast depletion of all resources and an increase in pollution. From a given welfare threshold, people should become more interested in social wellbeing causing a turn in the relationship, the increase in income being now linked with a decrease in pollution. Therefore there is a graphical representation as an inverted U-shape when income is on the horizontal axis and pollution on the vertical one, image that resembles the original Kuznets curve linking income and inequality. Although there are many skeptical researchers, such curves are still a nice dream that hopefully future empirical results will confirm.

As a final remark, we would like to emphasize the classical distinction between correlation and causality. Empirical results from this study should not be interpreted as a proof that trade expansion undermines sustainable development, a theory that will always find supporters in the anti-globalization circles. Properly conducted, trade is an indispensable ingredient of any development strategy. The negative correlation that was found here is merely the symptom of an evolution stage of analyzed economies. They must become mature and stop waiting for miraculous recipes from Brussels. Instead, they should actively contribute to shaping a Europe of sustainable wellbeing.

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